IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of:
Aviad Zlotnick

Application No.: 09/616,977   Confirmation No.: 7345

Filed: July 14, 2000   Art Unit: 2178

For: DIRECTOR SERVICE FOR FORM   Examiner: K. R. Stork
      PROCESSING

APPEAL BRIEF

MS Appeal Brief - Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

As required under § 41.37(a), this brief is filed within two months of the Notice of
Appeal filed in this case on May 1, 2007, and is in furtherance of said Notice of Appeal.

The fees required under § 41.20(b)(2) are dealt with in the accompanying
TRANSMITTAL OF APPEAL BRIEF.

This brief contains items under the following headings as required by 37 C.F.R. § 41.37
and M.P.E.P. § 1205.2:

I.	Real Party In Interest
II	Related Appeals and Interferences
III.	Status of Claims
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I.   REAL PARTY IN INTEREST

The real party in interest for this appeal is:

International Business Machines Corporation

II.   RELATED APPEALS AND INTERFERENCES

There are no other appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in this appeal.

III.   STATUS OF CLAIMS

A.   Total Number of Claims in Application

There are 33 claims pending in application.

B.   Current Status of Claims

     1.   Claims canceled: 2-3; 20-21

     2.   Claims pending: 1, 4-19; 22-37

     3.   Claims allowed: None

     4.   Claims rejected: 1, 4-19; 22-37

C.   Claims On Appeal

The claims on appeal are claims 1, 4-19; 22-37

IV.   STATUS OF AMENDMENTS

Applicant did not file an Amendment After Final Rejection. No amendments have been made since the Official Action of February 1, 2007.

V.   SUMMARY OF CLAIMED SUBJECT MATTER

One aspect of Appellant's invention, as recited in independent claim 1, provides a method for processing documents that include data in a predefined domain. A representative example of such a domain could be the population of practicing physicians in the United States, as noted in the specification on page 11, lines 12-14. The method includes the following steps:

(a) A directory of data is defined, relating to the predefined domain. See steps 34 and 38 in Fig. 2, as described on page 11, lines 5-14, and page 12, lines 5-20, in the specification.

(b) Images of a number of fields, containing respective information, are received from a client via a computer network. The connection between client 22 and directory service 30 via network 28 is shown in Fig. 1, and transmission of form or field images is described on page 10, lines 22-25, and page 13, lines 9-15.

(c) The images are processed to code the information in the fields, as shown in step 46 in Fig. 3 and described on page 10, lines 25-26, and page 13, lines 27-32.

(d) The directory is used to look up the coded information in order to check whether the information was coded correctly, as shown in step 48 in Fig. 3 and described on page 10, lines 27-29, and page 14, lines 1-19.

(e) The checked, coded information is returned over the network to the client, as shown in step 54 in Fig. 3 and described on page 11, lines 2-4, and page 15, lines 8-9.

(f) Payment is received from the client for coding and checking the information according to the number of fields processed, based upon a price per field processed, as described on page 4, lines 15-19, and on page 15, lines 10-12.

As explained in the specification (page 4, lines 9-14), the method of claim 1 is beneficial in enabling clients who are not expert in OCR and do not have convenient access to appropriate directories to obtain high-quality coding results without a major investment in new infrastructure or capabilities. The use of a domain-specific directory enables the directory service to search and check the coded information with greater reliability and speed than general-purpose, generally-available directories (page 3, lines 24-28).

Independent claim 12 recites a method for processing forms, which include fields filled in with information in a predefined domain. The method includes the following steps:

(a) A directory of data relating to the predefined domain is defined in advance of reading out contents of the forms for processing. The directory is defined by selecting data specific to the domain from one or more general databases, as shown in step 38 in Fig. 2 and described on page 3, lines 13-18, and page 12, lines 5-15.

(b) Information filled into a field on the forms is received from a client via a computer network, as described on page 10, lines 22-25, and page 13, lines 9-15. The connection between client 22 and directory service 30 via network 28 is shown in Fig. 1. The information itself is filled into the field by users in communication with the client, as described on page 12, lines 26-29.

(c) The correctness of the information is checked by looking up the information in the directory, as shown in step 48 in Fig. 3 and described on page 10, lines 27-29, and page 14, lines 1-19.

Independent claim 19 recites apparatus for processing documents that include information in a predefined domain. The apparatus includes:

(a) A memory, which stores a directory of data relating to the predefined domain. See storage device 33 in Fig. 1, which stores one or more directories 32, as described on page 10, lines 25-29.

(b) A directory service processor, which receives from a client via a computer network images of a number of fields containing respective information, and processes the images to code the information. See directory service 30 in Fig. 1, and the description of the functionality of the processor on page 10, lines 13-16. The processor looks up the coded information in the directory so as to check whether the information is coded correctly, returns the checked, coded information over the network to the client, and receives payment from the client in exchange for coding and checking the information according to the number of the fields processed, based upon a price per field processed. These functions of the processor are similar to the steps of the method of claim 1, and

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they are shown and described in the figures and passages of the specification that are cited above in reference to claim 1.

Independent claim 30 recites apparatus for processing forms, which include a field filled in with information in a predefined domain. The apparatus includes:

(a) A memory, in which a directory of data relating to the predefined domain is stored by selecting data specific to the domain from one or more general databases in advance of reading out contents of the forms for processing. See storage device 33 in Fig. 1, which stores one or more directories 32, as described on page 10, lines 25-29. The manner in which the directory is created is described on page 3, lines 13-18, and page 12, lines 5-15.

(b) A processor, which receives from a client via a computer network the information that is filled into the field on the forms by a plurality of users in communication with the client. The processor checks whether the information is correct by looking up the information in the directory. See directory service 30 in Fig. 1, and the description of the functionality of the processor on page 10, lines 13-16. The functions of the processor are similar to the steps of the method of claim 12, and they are shown and described in the figures and passages of the specification that are cited above in reference to claim 12.

Independent claim 35 recites a computer software product, comprising a computer-readable medium containing software instructions that cause a computer to carry out functions similar to the method of claim 1. Embodiment of the present invention in such software is described in the specification on page 10, lines 16-19. The explanation of claim 1 given above shows the support in the specification for the functions that are recited in claim 35.

Independent claim 37 recites a computer software product, comprising a computer-readable medium containing software instructions that cause a computer to carry out functions similar to the method of claim 12. As noted above, embodiment of the present invention in such software is described in the specification on page 10, lines 16-19. The explanation of claim 12 given above shows the support in the specification for the functions that are recited in claim 37.

VI.   GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

Claims 1, 5-11, 19, 23-29, 35 and 36 were rejected under 35 U.S.C. 103(a) over Lorie

(U.S. Patent 5,933,531) in view of Jansen et al. (U.S. Patent 6,243,450). Claims 4 and 12 were

rejected under 35 U.S.C. 103(a) over Lorie in view of Jansen and further in view of DiPiazza (U.S.

Patent 6,028,970). Claims 12-16, 18, 30-34 and 37 were rejected under 35 U.S.C. 103(a) over Lorie

in view of DiPiazza. Claim 17 was rejected under 35 U.S.C. 103(a) over Lorie in view of DiPiazza

and further in view of Jansen. Appellant believes these rejections should be reversed.

VII.   ARGUMENT

I. The Section 103(a) Rejection of Independent Claims 1, 19 and 35

   a. Introductory comments

Appellant respectfully submits that the Examiner erred in maintaining that claims 1, 19

and 35 are obvious over Lorie in view of Jansen.

Under *Graham v. John Deere Co.*, 383 U.S. 1 (1965), there are several basic factual

inquiries that must be considered under 35 U.S.C. §103 in evaluating the obviousness of an

invention:

1. The scope and content of the prior art;

2. Differences between the prior art and the claims at issue; and

3. The level of ordinary skill in the pertinent art.

With respect to the first two of these factors, MPEP 2143.03 makes clear that:

> "To establish *prima facie* obviousness of a claimed invention, all the
> claim limitations must be taught or suggested by the prior art. *In re Royka*, 490
> F.2d 981, 180 USPQ 580 (CCPA 1974). 'All words in a claim must be considered
> in judging the patentability of that claim against the prior art.' *In re Wilson*, 424
> F.2d 1382, 1385, 165 USPQ 494, 496 (CCPA 1970)."

Although the recent Supreme Court decision in *KSR International Co. v. Teleflex Inc. et*

al, 550 U.S. __ (2007) has relaxed the "TSM" test for combining references, it made no change in

the *Graham* factors or in the requirements noted above that all claim limitations must be taught or

suggested by the prior art. The Supreme Court noted with approval *In re Kahn*, 441 F. 3d 977, 988 (CA Fed. 2006), which stated that "rejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness."

Claim 1 in the present patent application recites a method for processing documents in a particular domain, for which a directory of related data is defined. A client sends images of fields over a computer network for processing. The images are processed to code the information, and the coded information is checked for correctness by lookup in the directory. The checked, coded information is returned over the network to the client, who pays for the coding and checking according to the number of fields processed, at a certain price per field processed.

Lorie describes a method and system for optical character recognition (OCR) using context analysis and operator input (abstract). The context analysis may use a dictionary (col. 8, lines 9-45). The system has the form of a conventional, standalone computer, including a bus, CPU, program store and user interface (Fig. 2, col. 4, lines 33-43).

Jansen describes apparatus for vending public multimedia services on a pay-per-use basis (abstract). The usage cost is computed based on the time of use of the service, wherein the charge for time may be adjusted depending on the network throughput (col. 12, lines 36-60, and col. 14, lines 11-18).

b. The cited art fails to teach or suggest all of the claim limitations

Turning to the first and second *Graham* factors and the requirements of *Royka* listed above, Appellant notes that the cited references simply fail to teach or suggest the novel model of payment recited in claim 1: according to the number of fields processed, based upon a price per field processed. With regard to this point, the Examiner acknowledged that Lorie does not disclose receiving payment based upon a price per field processed (or per any other unit of service), but held that Jansen discloses this element of claim 1 in his abstract. In the cited passage, however, Jansen describes charging for a multimedia service at a certain cost per unit time. Jansen is directed to vending public multimedia services, not processing fields of information. He therefore could not

possibly have suggested using the number of fields processed as a basis for payment, as recited in claim 1.

In response to this point in the Official Action (page 10, second paragraph), the Examiner could say only that "Jansen discloses receiving payment for a service based upon a price per unit... A field is a unit. Therefore, a price per field is within the scope of a price per unit." This sort of reasoning might apply if claim 1 were drawn to charging based on a price per unit generically, and the prior art taught charging for a particular kind of unit. In the present case, however, the cited art teaches one sort of unit: time, whereas claim 1 recites a completely different sort of unit: fields processed.

As the cited art does not teach all the limitations of claim 1, the Examiner's position must be that the cited art suggests charging on a price-per-field-processed basis Since the Examiner has not shown any sort of logical connection between units of time and units of fields processed, his position is based on nothing more than his own conclusory statement, without any rational underpinning to support the legal conclusion of obviousness, contrary to the requirements set forth by the Supreme Court in *KSR*. The position taken by the Examiner is tantamount to stating any method of charging for a service based on a price per unit must now be obvious, even if the service is different and the units are different from those disclosed in the prior art.

Therefore, on this basis alone, it is clear that the Examiner has failed to make a *prima facie* case of obviousness against claim 1 in accordance with the requirements set forth by the Supreme Court in *Graham* and *KSR*.

c. The Examiner has not considered the invention as a whole

Even if it were to be conceded, for the sake of argument, that the notion of charging for processing information on a price-per-field-processed basis was taught or suggested by the prior art, the Examiner has still failed to show that the invention of claim 1 is obvious when the claimed invention is considered as a whole (*Hodosh v. Block Drug Co., Inc.*, 786 F.2d 1136 (Fed. Cir. 1986), cited in MPEP 2141(II)). For this purpose, it is necessary to view the invention and the cited art through the eyes of the person of ordinary skill in the art, as provided by the third *Graham* factor.

The relevant art in the present case is the art of processing documents, as stated in the preamble of claim 1, and specifically of coding information in an image of a document.

The only evidence of record in this case that could be considered indicative of the level of ordinary skill in this art is Lorie, which was patented in 1999, one year before the date of filing of the present patent application. At that time, OCR was commonly performed by integrated computer systems, with a local processor, memory, user interface, input and output, as shown, for example, in Lorie's Fig. 2. The person of ordinary skill in the art of processing documents would have been an engineer or technician who engaged in setting up and operating such integrated systems.

Claim 1 in the present patent application, by contrast, recites a network-based method of document processing that was new at the time this application was filed, and would have been outside the realm of knowledge and experience of persons of ordinary skill in this art. According to this method, a client sends field images over a network for processing, and then receives (and pays for) corresponding coded information, which has been checked using a directory of data relating to a predefined domain. As explained in the specification (page 4), this service enables a client who is not expert in image processing and does not have convenient access to appropriate, focused directories to obtain high-quality coding results without a major investment in acquiring new infrastructure or capabilities. The client pays for exactly the service he or she receives, in terms of the number of fields that are processed.

There is nothing in the cited references that would have led the person of ordinary skill in the document processing art to transform the conventional, integrated model described by Lorie into the type of network-based service recited in claim 1. The cited references make no mention of any sort of client, nor do they mention or even suggest that images might be sent over a computer network and coded information returned over the network.

In response to this point, the Examiner asserted that "Lorie still provides one possible embodiment of the invention as the invention in a networked environment" (page 10 in the Official Action). This assertion is based solely on Lorie's recitation, quoted by the Examiner, that his invention "may be implemented using standard programming and/or engineering techniques... Any such resulting program(s)... may be embodied or provided within... any transmitting/receiving

medium... thereby making a computer program product..." (col. 8, lines 51-62). This boilerplate passage relates to nothing more than transmission of operating software over a communication link. It does not disclose or suggest anything at all with regard to transmission of images or receipt of coded information by a client. The Examiner has not identified any reason that would have led the person of ordinary skill to transform document processing into a network-based service of the sort recited in claim 1.

To summarize, the Examiner has failed on a number of counts to make a case of *prima facie* obviousness against claim 1. Therefore, claim 1 is clearly patentable over the cited art.

Independent claims 19 and 35 respectively recite apparatus and a computer software product that operate on principles similar to the method of claim 1. These independent claims are therefore believed to be patentable over the cited art for the reasons explained above.

Therefore, the rejection of claims 1, 19 and 35 should be reversed.

II. The Section 103(a) Rejection of Independent Claims 12, 30 and 37

a. Introductory comments

Appellant respectfully submits that the Examiner erred in maintaining that claims 12, 30 and 37 are obvious over Lorie in view of DiPiazza.

Claim 12 recites a novel method for processing forms, which are filled in with information in a predefined domain. A directory is defined in advance for the domain by selecting data specific to the domain from one or more general databases. The information that is filled into a field on the forms is then checked for correctness by lookup in the directory. As explained in the specification (page 3), the use of this sort of specific, focused directory enables the service to search and check the coded information with greater reliability and speed than are generally achievable with general-purpose databases. As in the case of claim 1, a service implementing the method of claim 12 enables a client who is not expert in image processing and does not have convenient access to appropriate, focused directories to obtain high-quality coding results without a major investment in acquiring new infrastructure or capabilities.

DiPiazza describes a method for enhancing OCR using a rule base determined by recognition of a particular context type of an electronic bit-map portion (abstract). The rule base is selected from a plurality of rule bases for the determined context type (col. 3, lines 40-41). Examples of context types mentioned by DiPiazza include a business order form, pages of a magazine, and a facsimile cover sheet (col. 5, lines 12-17). Separate and apart from these context types, DiPiazza describes a database enhancement module, which stores data values such as area codes, credit card and bank account information, and customer names, for use in data verification (col. 8, line 51 – col. 9, line 15).

b. The cited art fails to teach or suggest all of the claim limitations

Neither of the cited references teaches or suggests using a <u>domain-specific directory</u> for checking correctness of information. Rather, both Lorie and DiPiazza use information lookup in general databases, as was known in the art at the time the present patent application was filed. DiPiazza, as noted above, describes data verification using a database enhancement module, which stores data values such as area codes, credit card and bank account information, and customer names (col. 8, line 51 – col. 9, line 15). Values of these sorts are stored in general databases. There is not the slightest suggestion, in either Lorie or DiPiazza, of defining the directory for a predefined domain by <u>selecting data specific to the domain from such general databases</u>, as is recited in claim 12.

Although DiPiazza himself describes the use of databases in data verification, the Examiner chose another element of DiPiazza's method – the "rule base" – to equate with the directory of claim 12 (see page 7, lines 9-14, in the Official Action). This interpretation, however, is contrary to the clear, literal sense of DiPiazza himself, who presents his <u>information-lookup database and his rule bases as separate and distinct entities</u> (as shown, for example, in col. 9, lines 16-28). The Examiner has not given any sort of rational explanation as to why a person of ordinary skill in the art would have glossed over DiPiazza's explicit teachings regarding the use of general databases, and would instead have turned to DiPiazza's rule bases, which are a different sort of entity.

Moreover, even if the Examiner's position, that a rule base is a database, were to be adopted for the sake of argument, there is still no suggestion in DiPiazza of defining a rule base by selecting rules specific to the domain from a "general rule base," as would be required for parallelism with claim 12. In response to this point in the present Official Action (bottom of page 10 through top of page 11), the Examiner asserted that certain passages in DiPiazza show that the "rule bases are stored within a general database...." There is simply no support for this assertion in the cited passage or elsewhere in DiPiazza. On the contrary, the cited passages reinforce the separation in DiPiazza between the data rules module and the database enhancement module that is explained above (see particularly col. 4, lines 4-8).

Furthermore, even if DiPiazza's context-specific rule bases were to be stored in some general repository, this is not how they are defined. The fact that DiPiazza may have rule bases that are specific to certain context types does not mean that they are selected from a general rule base, nor does DiPiazza teach or suggest that there might be a general rule base of this sort. On the contrary, <u>each of DiPiazza's rule bases is built by learning based on processing of documents of the specific context type</u>, as shown in Figs. 3 and 4.

Claim 12, by contrast, recites <u>defining</u> a domain-specific directory by <u>selection of data from a general database</u>. The Examiner has failed to identify any teaching or suggestion of this element of claim 12 in the cited art. Therefore, on at least this basis, the Examiner has failed to make a *prima facie* case of obviousness against claim 12.

c. The Examiner has not considered the invention as a whole

Even if it were to be conceded, for the sake of argument, that the notion of defining a domain-specific directory for a predefined domain in the specific manner recited in claim 12 was taught or suggested by the prior art, the Examiner has still failed to show that the invention of claim 12 is obvious when the claimed invention is considered as a whole.

Again, like claim 1, claim 12 recites a <u>network-based</u> method of document processing that was new at the time this application was filed, and would have been outside the realm of knowledge and experience of persons of ordinary skill in this art. There is nothing in the cited references that would have led the person of ordinary skill in the document processing art to

transform the conventional, integrated model described by Lorie into the type of network-based service recited in claim 12. Lorie neither mentions nor suggests this sort of model, nor does DiPiazza supply the missing teachings or suggestions. The Examiner has not identified any reason, other than his own conclusory statements, that would have led the person of ordinary skill to transform existing methods of form processing into a network-based service of the sort recited in claim 12.

Thus, the cited references do not disclose all of the elements of the method of claim 12, nor has the Examiner given "articulated reasoning with some rational underpinning" to support his contention that the claim is obvious. Therefore, claim 12 is patentable over Lorie in view of DiPiazza.

Independent claims 30 and 37 respectively recite apparatus and a computer software product that operate on principles similar to the method of claim 12. These independent claims are therefore also patentable over the cited art for the reasons explained above.

The rejection of claims 12, 30 and 37 should thus be reversed.

III. The Section 103(a) Rejection of Claims 4 and 22

Appellant respectfully submits that even if independent claims 1 and 19 were conceded to be unpatentable over Lorie in view of Jansen, the cited references still do not teach or suggest the added elements of dependent claims 4 and 22.

Claims 4 and 20 depend respectively from claims 1 and 19 and add that the directory used in checking the coded information is defined by selecting data specific to the predefined domain from one or more general databases. The Examiner conceded that this feature is absent from Lorie and Jansen, but asserted that it is taught by DiPiazza.

As explained above in reference to claim 12, however, DiPiazza describes rule bases, which are specific to certain context types and are each defined by learning from documents of the specific context type. DiPiazza does not teach or suggest defining a domain-specific directory by selection of data from one or more general databases as is recited in claims 4 and 22.

Therefore, claims 4 and 22 are independently patentable over the cited art, notwithstanding the patentability of independent claims 1 and 19.

IV. The Section 103(a) Rejection of Claims 6 and 24

Appellant respectfully submits that even if independent claims 1 and 19 were conceded to be unpatentable over Lorie in view of Jansen, the cited references still do not teach or suggest the added elements of dependent claims 6 and 24.

Claims 6 and 24 depend respectively from claims 5 and 23, which in turn depend respectively from claims 1 and 19. Claims 6 and 24 recite that the processed documents include a template delineating the fields, and that what is received from the client for processing is images of the characters filled into the fields after drop-out of the template. In other words, image processing is performed in two stages: First the template is dropped out of the image, after which only the characters in the fields, without the template, are received over the network for coding and checking.

In rejecting claims 6 and 24, the Examiner cited col. 1, lines 16-30, in Lorie as purportedly teaching the features of these claims. The cited passage says nothing at all about template drop-out.

Furthermore, as explained above in reference to claim 1, prior to the present invention, document processing was typically carried out as a centralized operation on an integrated platform, as shown in Lorie's Fig. 2. Even if it were conceded that template drop-out was known in the art before the filing date of the present patent application, there is nothing in the prior art that would have led the person of ordinary skill to split the processing function in the manner defined by claims 6 and 24. This approach goes a step farther than the novel network-based service model recited in claims 1 and 19: It requires that an initial, less specialized part of the image processing be performed even before the field images are transmitted over the network. There is nothing in the cited art that might have suggested this sort of two-stage approach, with network transmission between the stages.

Therefore, claims 6 and 24 are independently patentable over the cited art, notwithstanding the patentability of independent claims 1 and 19.

V. The Section 103(a) Rejection of Claims 15 and 32

Appellant respectfully submits that even if independent claims 12 and 30 were conceded to be unpatentable over Lorie in view of DiPiazza, the cited references still do not teach or suggest the added elements of dependent claims 15 and 32.

Claims 15 and 32 depend from claims 12 and 30, respectively, and recite that the information received from the client comprises field images, which are coded and checked by look-up in the directory. In rejecting these claims, the Examiner maintained simply that they disclose limitations similar to those disclosed by Lorie with respect to claim 1.

Appellant agrees that the elements added by claims 15 and 32 are similar to those in claim 1, but denies that Lorie teaches or suggests such elements. On the contrary, as explained above, Lorie mentions no more than the possibility that program code may be transmitted over a network. Lorie says nothing that might have led a person of ordinary skill to transmit images from a client over a network for coding and checking, as is recited in claims 15 and 32.

Therefore, claims 15 and 32 are independently patentable over the cited art, notwithstanding the patentability of independent claims 12 and 30.

VI. The Section 103(a) Rejection of Claim 17

Appellant respectfully submits that even if independent claim 12 were conceded to be unpatentable over Lorie in view of DiPiazza, the cited references still do not teach or suggest the added elements of dependent claim 17.

Claim 17 depends from claim 16, which depends from claim 12, and recites that payment is received from the client according to a number of the forms for which the correctness of the information in a field was checked. In rejecting claim 17, the Examiner conceded that Lorie and DiPiazza do not disclose the added feature of this claim, but asserted that "Jansen discloses receiving payment for a service based upon a price per unit of service." In other words, as in regard

to claim 1, the Examiner has evidently again taken the position that charging for service based on any unit whatsoever is obvious on the basis of Jansen's time-based charging scheme.

Since the Examiner has not shown any sort of logical connection between units of time and units of forms checked, his position is again based on nothing more than his own conclusory statements. Therefore, claim 17 is independently patentable over the cited art, notwithstanding the patentability of independent claim 12.

VIII.   CLAIMS

A copy of the claims involved in the present appeal is attached hereto as Appendix A. As indicated above, the claims in Appendix A include the amendments filed by Applicant on November 22, 2006.

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APPENDIX A

Claims Involved in the Appeal of Application Serial No. 09/616,977

1.   A method for processing documents including information in a predefined domain, the method comprising:

defining a directory of data relating to the predefined domain;

receiving from a client via a computer network images of a number of fields containing respective information;

processing the images to code the information;

looking up the coded information in the directory so as to check whether the information is coded correctly;

returning the checked, coded information over the network to the client; and

receiving payment from the client in exchange for coding and checking the information according to the number of the fields processed, based upon a price per field processed.

4.   A method according to claim 1, wherein defining the directory comprises selecting data specific to the predefined domain from one or more general databases.

5.   A method according to claim 1, wherein receiving the images comprises receiving images of alphanumeric characters in the fields.

6.   A method according to claim 5, wherein the documents includes a template delineating the fields, and wherein receiving the images of the characters comprises receiving the images of the characters filled into the fields and remaining after drop-out of the template from the image of the fields.

7.   A method according to claim 5, wherein processing the images comprises applying computerized optical character recognition (OCR) to code the characters.

8.   A method according to claim 7, wherein looking up the coded information comprises selecting a preferred reading of the characters from among two or more possible readings generated by the OCR, responsive to the data in the directory.

9. A method according to claim 7, wherein looking up the coded information comprises generating a confidence score, and wherein processing the images comprises passing the images to a human operator for coding when the confidence score is below a predetermined threshold.

10. A method according to claim 7, wherein looking up the coded information comprises detecting an error in the coded characters and correcting the error using the data in the directory.

11. A method according to claim 1, wherein looking up the coded information comprises detecting an error in the coded information and correcting the error using the data in the directory.

12. A method for processing forms, each form including a field that is filled in with information in a predefined domain, the method comprising:

defining, in advance of reading out contents of the forms for processing, a directory of data relating to the predefined domain by selecting data specific to the domain from one or more general databases;

receiving from a client via a computer network the information that is filled into the field on the forms by a plurality of users in communication with the client; and

checking whether the information is correct by looking up the information in the directory.

13. A method according to claim 12, wherein receiving the information comprises receiving coded information, and wherein checking whether the information is correct comprises checking whether the coded information is correct.

14. A method according to claim 13, wherein receiving the coded information comprises receiving coded characters generated by the client using optical character recognition (OCR).

15. A method according to claim 12, wherein receiving the information comprises receiving an image of the field, and comprising processing the image to code the information, wherein checking whether the information is correct comprises checking whether the information was coded correctly by looking up the coded information in the directory.

16. A method according to claim 12, and comprising returning the checked information over the network to the client.

17. A method according to claim 16, and comprising receiving payment from the client according to a number of the forms for which the correctness of the information in the field was checked.

18. A method according to claim 16, wherein checking whether the information is correct comprises detecting an error in the information, and comprising correcting the error using the data in the directory.

19. Apparatus for processing documents including information in a predefined domain, the apparatus comprising:

a memory, in which a directory of data relating to the predefined domain is stored; and

a directory service processor, adapted to receive from a client via a computer network images of a number of fields containing respective information, to process the images to code the information, to look up the coded information in the directory so as to check whether the information is coded correctly, to return the checked, coded information over the network to the client, and to receive payment from the client in exchange for coding and checking the information according to the number of the fields processed, based upon a price per field processed.

22. Apparatus according to claim 19, wherein the directory comprises data specific to the predefined domain, which are selected from one or more general databases.

23. Apparatus according to claim 19, wherein the images comprises alphanumeric characters filled into the fields.

24. Apparatus according to claim 23, wherein the documents includes a template delineating the fields, and wherein the characters in the images comprise the characters remaining after drop-out of the template from the images of the fields.

25. Apparatus according to claim 23, wherein the processor is adapted to apply computerized optical character recognition (OCR) to code the characters.

26. Apparatus according to claim 25, wherein the processor is further adapted to select a preferred reading of the characters from among two or more possible readings generated by the OCR, responsive to the data in the directory.

27. Apparatus according to claim 25, wherein the processor is further adapted to generate a confidence score in a reading generated by the OCR, and to pass the image to a human operator for coding when the confidence score is below a predetermined threshold.

28. Apparatus according to claim 25, wherein the processor is adapted to detect an error in the coded characters and to correct the error using the data in the directory.

29. Apparatus according to claim 19, wherein the processor is adapted to detect an error in the coded information and to correct the error using the data in the directory.

30. Apparatus for processing forms, each form including a field that is filled in with information in a predefined domain, the apparatus comprising:

a memory, in which a directory of data relating to the predefined domain is stored by selecting data specific to the domain from one or more general databases in advance of reading out contents of the forms for processing; and

a processor, adapted to receive from a client via a computer network the information that is filled into the field on the forms by a plurality of users in communication with the client, and to check whether the information is correct by looking up the information in the directory.

31. Apparatus according to claim 30, wherein the processor is adapted to receive coded information, and to check that the information is coded correctly.

32. Apparatus according to claim 30, wherein the processor is adapted to receive an image of the field and to process the image to code the information, wherein the processor is adapted to check whether the information was coded correctly by looking up the coded information in the directory.

33. Apparatus according to claim 30, wherein the processor is adapted to return the checked information over the network to the client.

34. Apparatus according to claim 30, wherein the processor is adapted to detect an error in the information, and to correct the error using the data in the directory.

35. A computer software product for processing documents including information in a predefined domain, the product comprising a computer-readable medium in which program instructions are stored, which instructions, when read by a computer, cause the computer to receive a definition of a directory of data relating to the predefined domain and, upon receiving from a

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client via a computer network images of a number of fields containing respective information, to process the images so as to code the information, to look up the coded information in the directory so as to check whether the information is coded correctly, to return the checked, coded information over the network to the client, and to receive payment from the client in exchange for coding and checking the information according to the number of the fields processed, based upon a price per field processed.

36. A product according to claim 35, wherein the images comprises alphanumeric characters filled into the fields, and wherein the instructions cause the computer to apply optical character recognition (OCR) to code the characters.

37. A computer software product for processing forms, each form including a field that is filled in with information in a predefined domain, the product comprising a computer-readable medium in which program instructions are stored, which instructions, when read by a computer, cause the computer to receive a definition of a directory of data relating to the predefined domain generated by selecting, in advance of reading out contents of the forms for processing, data specific to the domain from one or more general databases, and upon receiving from a client via a computer network the information that is filled into the field on the forms by a plurality of users in communication with the client, to check whether the information is correct by looking up the information in the directory.

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APPENDIX B – EVIDENCE

None presented.

APPENDIX C – RELATED PROCEEDINGS

None.